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## Care and Preservation of Photographs and Negatives

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## CARE AND PRESERVATION OF PHOTOGRAPHS AND NEGATIVES

Richard T. Eltzroth\*

The care and preservation of photographs involves essentially the same principles as govern the care of printed materials:

- 1) optimum conditions of physical storage, especially in regard to temperature-humidity control and to methods of filing;
- 2) handling and use under conditions that produce minimum wear and tear; and
- 3) use of reproductions, where feasible, as a substitute for the original photographs, particularly in those instances in which the original is not readily replaceable.

It is the considered opinion of most photo-archivists that conditions for the preservation of photographs are getting worse, not better. Commercially processed photographs now appear to be self-destructive within fifty to one hundred years because of sulfur compounds in the photograph, poor mounting, and the use of bad adhesives.

### Printing

Introduction of the stabilization processed print has magnified the preservation problem. Stabilization processors, which produce finished prints in about ten seconds and are coming into ever more common use, saturate their prints with a developing fixer called "hypo" which, if not washed off, will ruin a print in six to twenty-four months. For this reason, these prints should never be

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\*Mr. Eltzroth is Staff Archivist of the Atlanta Historical Society. This article is adapted from his presentation at the Society's Workshop on Archives and Records, November 16, 1973.

stored near conventional photographs, as they will very shortly ruin the regular prints. Stabilization prints are almost impossible to identify visually, although one brand, Foto-Rite, has the name on the back of the paper. Stabilization processed prints can be treated in the darkroom to produce prints which can be integrated into regular photograph collections.

### Dry Mounting of Prints

Dry mounting (backing photographs with stiff paper or board) is without doubt the flattest, most secure, and aesthetically most pleasing method of mounting prints. Some authorities advocate, however, that prints not be dry-mounted, because the long-term effects of the chemicals in the plastics used to make dry-mounting tissue are not known at this time, and because no mounting boards or papers currently available meet the standards for chemical purity and stability that have been established for photographic paper. One of the foremost problems in mounting photographs is that mounting board, sulfur and acid-free when it leaves the mill, may, after a period of time, become acid. This acid will react with the sulfur dioxide in polluted air to form sulfuric acid, which will then attack the photo image. If prints are to be mounted, most authorities now suggest that standard dry mounting tissue is the best available material. Although not perfect, the tissue will do more good than harm by "protecting" the print from chemicals present in the mounting board.

Pastes, adhesives, and pressure sensitive tapes are to be avoided. Probably nothing can damage a photograph more than mounting it with rubber cement or contact cement. These products contain high concentrations of sulfur and will quickly destroy the photo image.

The "school solution" is dry mounting a print back-to-back with processed photographic paper. The only satisfactory way to mark this type of mounting is to photograph the caption information onto the backing sheet before processing it.

### Marking Prints

Try not to mark or write on any print. Pen points



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or hard pencils always will make a raised impression on the opposite side of the print, damaging the fibers of the paper and detracting from the quality of the print. Magic markers and similar volatile dye markers are very harmful to photo images and should never be used. If you must mark the print, use extremely soft-lead pencil and lay the print on a very hard surface.

### Storage of Prints

Proper storage means keeping the photograph away from all substances and gases that might harm the delicate silver image, which includes nearly all common materials currently used to store photographs. Photographs should never be packaged in common paper envelopes, wood boxes or cabinets, and never ever in cardboard boxes, including the boxes in which photographic paper is packaged. Common cardboards release a wide variety of chemical substances, including sulfur gases and peroxides, very damaging to silver photo images. Also, never use rubber bands or metal paper clips with photographs.

Instead of listing the materials to be avoided, it is easier to mention the materials which are safe to use around photographs. These are:

- Polyethylene
- Cellulose acetate
- 100% rag content acid free paper
- Stainless steel
- Metals coated with baked enamel
- Aluminum
- Glass or porcelain.

Note that the common glassine envelope which is extensively used to store prints and negatives is not included in the list of safe materials. Glassine paper is more "hydrated" during manufacture than other papers, resulting in a somewhat degraded fiber. Various additives are used to impart transparency and mechanical characteristics which, with time, volatilize, or "leach out," and can have a detrimental effect on image stability of adjacent photographs.

Excellent substitutes for glassine envelopes are the polyethylene containers and sleeves. Cellulose acetate

containers are also usually satisfactory, although they may, under high humidity, cause print and negative emulsions to stick or develop a condition which looks somewhat like partial ferrotyping (portions of the image being transferred onto the material in contact with the photograph, which dulls and hastens deterioration of the original). Use of acid-free paper envelopes, such as Permalife, is acceptable.

### Temperature and Humidity

Both high temperature and high humidity accelerate deterioration of photographs. Ideal storage is at near-freezing with a very low relative humidity of 25-30%. Of course this is not practical, but every effort should be made to keep the temperature below 75°F. and the relative humidity below 40%. High humidity, however, is more damaging than high temperatures. Fungus grows most actively in humidity above 60% and degrades the gelatin in the emulsion layer to such an extent that localized stripping will occur, removing the image and exposing the paper base of a print. Insects are attracted to fungus and may damage the emulsion layer. Furthermore, certain chemicals present in insect excretions may fade or bleach the image in localized areas. Although black and white prints can be processed in the darkroom for protection from fungus, at the present time there is no satisfactory fungicidal treatment for color prints. Note too that all plastics and wood will pass moisture over a period of time. A small electric de-humidifier placed in a print storage area during the summer months will be of great benefit if the room is not air-conditioned.

### Storage of Negatives

Everything said about the storage of prints also pertains to the storage of negatives, but a few additional precautions should be observed. Negatives should never be picked up between the thumb and forefinger, since fingerprints will be embedded in the emulsion and often cannot be removed. Moreover, certain chemicals exude from the body through the skin and adhere to the emulsion, causing chemical deterioration. If possible, handle negatives with clean white cotton or plastic gloves, or hold the film lightly with the outer edges between the thumb and forefinger.



When negatives are received from the processor, they should be placed in separate envelopes. If several are stored in one envelope, they should be separated by sheets of thin acid-free paper to help prevent scratches. Insert the negative in the envelope so that the emulsion side (the dull finish) is away from the glued seam, because adhesives can stain and damage the emulsion. Preferably the glued seam should be at one side of the envelope. Since many adhesives are hygroscopic (moisture-absorbent), they may create an area of dampness in the region of the seam, which will eventually cause a stain on the negative. Negatives should be kept free from dust. Even if negatives are carefully stored in envelopes, dust can filter in unless the storage area is kept clean and dust free.

### Storage of Slides

Slides require the same care in handling and storage as negatives and prints. In addition, care should be given to their projection time. The life of color slides depends largely upon the extent of the slide's exposure to the intense heat and light of the projector. Projection time should be limited to no more than one minute for any one viewing.

### Handling

Nothing accelerates deterioration in a photograph more than handling it. The solution to this problem seems simple enough--do not handle photographs. Logical but impractical. Minimum handling would require inspecting the print for condition, recording data for finding aids, mounting the print or inserting it in acid-free envelopes, and storing it in a dust-free container. At the time of mounting, a copy negative should be made, from which copies for the general public, for exhibits, for the media, and for publication can be produced. A contact print of the copy negative dry mounted to a control card should satisfy 90 percent of the photo research requests, and eliminate unnecessary retrieval and handling of the original print.

Every archival agency and institution has requirements which are different in some respect from every other institution. Consequently, individual requirements will

determine when, how, and where repositories will store their photographs. Factors as space, budget, and personnel, will govern procedures and the extent of a preservation program. Nonetheless, the basic procedures discussed here will apply to any program:

- 1) handle as little as possible; never abuse prints,
- 2) store in an acid-free, dust-free environment, and
- 3) maintain low temperature and humidity.

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Wilson, William K., and James L. Gear, Care of Books, Documents, Prints, and Films (National Bureau of Standards No. NBS-C155, U.S. Dept. of Commerce, 1971). Available for 45¢ from Supt. of Documents, U. S. Govt. Printing Office, Washington, D.C. 20402. [Recommended]

### Sources of Supply

#### Mount Board:

Charles T. Bainbridge & Sons  
12-26 Cumberland Street  
Brooklyn, New York 11205

Crescent Cardboard Company  
1240 North Homan Avenue  
Chicago, Illinois 60651

The Hollinger Corporation  
3810 South Four Mile Run Drive  
Arlington, Virginia 22206

Process Materials Corporation  
329 Veterans Boulevard  
Carlstadt, New Jersey 07072

#### Dry Mount Presses:

Bogen Photo Corporation  
P. O. Box 448  
Englewood, New Jersey  
07631

Caltura Mfg. Co.  
P. O. Box 613-C  
Camarillo, Calif. 93010

Seal, Inc.  
Derby, Connecticut 06418



Negative Files:

Print File, Inc.

Box 100

Schenactady, New York 12304

[Polyethylene containers]

The Nega-File Company

Furlong, Pennsylvania 18925

[Acetate containers]

The Hollinger Corporation

[Permalife containers]

Archival Reprocessing  
Services:

Archival Processing  
Company

111 East Burlington

Iowa City, Iowa 52240

East Street Gallery

723 State Street - Box 68

Grinnell, Iowa 50112

Archival Photographic  
Services

893 Greenwood Avenue

Atlanta, Georgia 30306